



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Kathleen Clarke
Executive Director

Lowell P. Braxton
Division Director

1594 West North Temple, Suite 1210

PO Box 145801

Salt Lake City, Utah 84114-5801

801-538-5340

801-359-3940 (Fax)

801-538-7223 (TDD)

October 31, 2000

CERTIFIED RETURN RECEIPT

Z 228 354 992

Ron Ryan
SF Phosphates Limited Company
9401 North Highway 91
Vernal, Utah 84087-7802

Re: Review of Notice of Intention to Revise Large Mining Operations (Tailings Storage Facility), SF Phosphates Limited Company, Vernal Phosphate Operations, M/047/007, Uintah County, Utah

Dear Mr. Ryan :

The Division has completed a review of your Notice of Intention to Revise Large Mining Operations submission for the Vernal Phosphate Operations, located in Uintah County, Utah, dated March 20, 2000. Due to a backlog of permit reviews and field work priorities we were unable to complete our review sooner. We apologize for our delay and any inconvenience this has caused SF Phosphates. After reviewing the information, the Division has several comments which will need to be addressed before tentative approval may be granted. The attached comments are listed under the applicable Minerals Rule heading. Please format your response in a similar fashion. Please provide a response to this review within the next 90 days.

The Division will suspend further review of this revision until your response to this letter is received. If you have any questions in this regard please contact me, Tony Gallegos, Lynn Kunzler, Tom Munson or Doug Jensen of the Minerals Staff. If you wish to arrange a meeting or site inspection to discuss this review, please contact us at your earliest convenience. Thank you for your cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb

Attachment: Review Comments 10/27/00

cc: Opie Abeyta, BLM State Office

Pete Sokolosky, BLM Vernal FO

M47-07-2-rev

REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

**SF Phosphates Limited Company
Vernal Phosphates Operations
M/047/007
October 27, 2000**

R647-4-105 - Maps, Drawings & Photographs

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)

Please label the discharge points for the fine and coarse tailings on Figure 2 or appropriate drawing. (AAG)

R647-4-106 - Operation Plan

106.3 Estimated acreages disturbed, reclaimed, annually.

Please respond to the previous comment under this heading regarding the construction materials (e.g., rip rap) for raising the tailings dam (lift) to be mined from a ridge within the impoundment area. Will all of this borrow area be inundated by tailings material during the life of the TSF, or will this borrow area require reclamation? It is our understanding that portions of the proposed borrow area have split surface and mineral estates. The surface rights are held by SF with the mineral rights held by the BLM. What is the BLM's position on the use of this borrow site? Will a mineral materials sale be required to use that portion of the proposed borrow area with split surface and mineral rights? (AAG)

Section 3.E. Inundation Area, page 6 of the Revision volume refers to a 50 acre total as the maximum acreage to be covered with tails or water during the operating life of the facility. This may be a typographical error. Please explain what acreage will be inundated by tailings. (AAG)

R647-4-109 - Impact Assessment

109.1 Impacts to surface & groundwater systems

Please submit the following information:

1. A map showing locations of all your surface and ground water monitoring sites, numbered to correspond to any information contained in your groundwater permit.
2. A summarized table listing the annual water quality and quantity data collected to date at each ground and surface water station. Please label the data according to the numbered sites as shown on the sampling map.
3. The sampling frequency and parameter list for both ground water and surface water sampling sites for future monitoring. (TM)

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Please describe the spillway channel design and provide a typical cross-section drawing of the channel. (AAG)

The Division would like to be kept informed of the results of planned tests concerning the metals uptake (Cu, Mo) of the revegetation. (DJ)

What are the current predictions for the length of time needed for the tailings to dry sufficiently to allow heavy equipment access? (AAG)

Section 6.I. Post Reclamation Maintenance and Monitoring, page 41 of the submission states that by the time tails reclamation commences, the seepage system will have been modified to pump tails water from seepages back to the mill for reuse in processing. This water will then be placed into an alternate water containment site. Please describe the location and design features of candidate alternate water containment sites. Please describe the final reclamation plan for these water containment sites.

Please note that the Division has included a line item sum for site monitoring in the draft reclamation estimate. Please describe the plans for the monitoring and managing tailings dam seepage during the years after seeding is complete, but before final reclamation release. (AAG)

110.5 Revegetation planting program

Section 6.G.4. Potential Revegetation Species, pages 35 and 36 of the Revision volume provide a cost per acre for the seed mixes listed. Please revise this information to include the basis or reference to support these seed mix costs. (AAG)

Section 6.G.5. Potential Amendments, page 37 of the Revision volume states the tailings nurse crop will provide a portion of the required organic matter (OM), and the final application rate of OM will be determined. For cost estimation purposes, the Division has included a reclamation task of adding mulch at one ton per acre as the final OM application rate. (AAG)

Section 6.G.5., page 37 of the Revision volume states that a hydromulch mixture containing the required fertilizer mixture, nurse crop seed, tackifier, and organic mulch material is planned to be used. This mixture is proposed to be applied to the tailings as soon as the surface is free from standing water. Hydromulching is an acceptable method for seeding; however, mixing seed, mulch, fertilizer, and tackifier together for a one-pass application is unacceptable. Fertilizer needs to be incorporated into the soil (growth medium) or, at least applied to the soil material. Seed needs to be in contact with the soil for establishment (not mixed in the mulch material). Seeds mixed with a fertilizer solution for even short durations of 15-20 minutes will experience a very high mortality rate. If a hydromulcher is used to apply fertilizer, seed and mulch, it will require three separate passes (fertilizer, seed, then mulch). The hydromulch tank should also be rinsed out between the fertilizer and seed applications. (LK)

R647-4-111 - Reclamation Practices

111.9 Dams and Impoundments

Section 3.E., page 6, of the Revision volume states a pool of runoff water could form in the center of the impoundment on SF's property. Please note that the Minerals Rules require water

impounding features to be reclaimed so as to be self draining and mechanically stable unless shown to have sound hydrologic design and be beneficial to the post mining land use. Please provide justification for a variance allowing surface runoff to impound on the reclaimed tailings surface according to section R647-4-112- Variance. (AAG)

R647-4-112 - Variance

Variances to Rules R647-4-107.5 for salvaging and storing soil, and 111.12 for redistribution of soils have been requested. Justification for these variances include the general lack of soil materials, isolation of soil materials preventing salvage with standard equipment, and the poor nature of the natural soils which could possibly be salvaged. Detailed soil analysis and comparisons of the natural soils with the tailings material (proposed substitute material) show that the tails are comparable to the natural soils and, are better than the natural soils for several of the measured parameters. With proper amendments and fertilizer, the tails are expected to provide a better plant growth media. Since granting a variance to not salvage soils would result in no soil material to be redistributed, a variance would also need to be approved for not redistributing soils. Based on the soil data and analysis provided, granting of the requested variances would not negatively impact the re-establishment of desirable vegetation after operations cease. *Therefore, the requested variances from the topsoil salvage and topsoil redistribution requirements (R647-4-107.5 and R647-4-111.12) are hereby granted for the tailings expansion area.* (LK)

R647-4-113 - Surety

The reclamation estimate for the Vernal Phosphate large mine operation was due for a detailed five-year review in 1998. A review backlog caused the review to be postponed, and then the review was intentionally delayed by the Division to coincide with the review of the TSF Revision to minimize bonding adjustments.

The Division has reviewed the reclamation surety estimate for the entire Vernal Phosphate Operation including the TSF Revision (including both federal and private lands). A revised reclamation surety estimate has been prepared and is attached for your review. Please note the items in the estimate highlighted by shading or comments in the margins. A number of these items require additional verification or confirmation before this draft estimate can be finalized. A majority of the items requiring verification relate to determining whether information from the original 1985 estimate describing the facilities is still accurate. The reclamation surety amount from this draft estimate is \$3,867,000 in terms of year 2005 dollars.

This draft reclamation estimate uses acreages from the Acreage Balance Sheet prepared by the Division (copy attached). These acreages were used to calculate reclamation costs for the various mining panels. The line items for demolition and removal of facilities in the draft estimate are based on the estimate prepared during 1984-1985, and are in need of being updated. Attached for your review are excerpts from section "IX. BONDING" of the 1984 estimate which list the structures and roads used in the initial cost calculations. Please review the draft estimate, Acreage Balance Sheet and lists, and provide the Division with comments or corrections. It may be helpful to schedule a site inspection after you have had an opportunity to review this draft estimate. (AAG)

File AC1 1047/008

RECEIVED

APR 4 1984

DIVISION OF
OIL, GAS & MINING

IX. BONDING (Amended January 1984)

A bonding estimate of \$997,405 was calculated to totally demolish all structures and reclaim all land mined since 1975 by Chevron Resources Co. and Stauffer Chemical Co. at the Vernal Phosphate Operation. The following assumptions were used to derive the estimate. All calculations are presented following the estimate summary.

ASSUMPTIONS

1. All equipment will be stripped from structures for salvage prior to demolition. Salvage profits would not be used to off-set the cost of demolition or reclamation.
2. The permitted land fill on the property will receive all debris resulting from the operation.
3. All disturbed land, whether under current reclamation or not, was included in the calculations as if untouched.
4. All structures will be demolished, no matter what the age or condition is at the time of demolition.
5. Seeding, fertilizing, and mulching specifications are the same as those presented in the Mine and Reclamation Plan.
6. Private individuals and contractors hired by the state will be utilized.
7. Wage rates were provided by DQGM staff.
8. Equipment rates were based upon quotes from Rental Rate Blue Book for Construction Equipment and from estimates obtained from local vendors and contractors.
9. An 8-hour workday was used for all calculations.
10. Acreage of disturbance was determined from Figure 3, Reclamation map.

IX. BONDING - APRIL 4, 1984

DEMOLITION ESTIMATE

STRUCTURE

ESTIMATE

Concentrator Building	68,325
Small Vehicle/Welding Shop	2,868
Heavy Equipment Shop & Mine Dry	4,468
Warehouse & Mill Complex	23,325
Storage Teepees (3)	25,995
MCC Building	1,401
Main Office	4,585
Electrical Warehouse & Shop	5,480
Water Tank and Pumphouses (5)	1,750
SAG Mill Building	23,990
Overland conveyor Control Bldg.	350
Water Storage Building	1,161
SAG Mill Storage Building	2,107
Stacker/Conveyor	50,000
Suspension Bridge	24,725
Slurry Line	36,225
Barges (2)	1,360
Fuel Dumps (2)	1,032
Oil Storage Building (2)	1,734
Reclamation Storage Bldg.	1,401
Fresh Water Tank Bldg.	350
Guard Station	350
	<hr/>
TOTAL	\$ 282,982

Refer to Structure Calculation Sheets.

IX. Bonding - App 4, 1984

ROAD ACREAGE CALCULATIONS

	<u>Width (ft.)</u>	<u>Linear Feet</u>	<u>Square Feet</u>	<u>Acreage</u>
Current Entrance	40	10,040	401,600	9.2
Former Entrance	30	4,440	133,200	3.0
SAG Mill	40	10,960	438,400	10.0
Panel A (1)	40	5,080	203,200	4.6
Panel A (2)	40	5,080	203,200	4.6
Panel A (3)	24	6,000	144,000	3.3
Tailing Access	30	7,200	224,400	4.9
Catch & Slurry Dams	20	1,840	36,800	0.8
Boneyard & Disposal	20	3,160	63,200	1.5
Air Field & Access	60	7,000	420,000	9.6
Stacker Access	40	2,360	94,400	2.2
Slurry Line	20	7,600	152,000	3.5
Panel "C" Mine	40	2,000	80,000	1.8
Upper Tails	16	3,400	54,400	1.2
Camp Canyon	40	4,000	160,000	3.6
		TOTALS		<u>68.0</u>

Note: Various access roads on the property were not included as they would be reclaimed at the same time as the mined land.

RECLAMATION SURETY ESTIMATE

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S.F. Phosphates Ltd. Company

M/047/007

Last Update

10/20/2000

Vernal Phosphate Operations

Uintah County, Utah

page "estimate"

PAGE NUMBER: 1

Prepared by Utah Division of Oil, Gas & Mining (AAG)

Estimate Details

- The format of this estimate is based on the Division's draft estimate of 11/6/92, surety information from SF Phosphates dated 1/12/93, and the Division's Nov. 1985 estimate.
- Area titles used in this estimate are taken from the 1993 estimate.
- The marker "???" in the righthand column indicates reclamation tasks or costs which are in question.
- Shading highlights items of significance, or items which require confirmation.
- Seed costs of \$106/acre @ 11.45 lb/acre for drill seeding & \$158/acre @ 17.18 lb/acre for broadcast seeding were used.
- Seed cost of \$21/acre @ 4.0 lb/acre for the tailings nurse crop was used.
- Fertilizer cost of \$38/acre was used.
- Acreages for each area were taken from the Division's Acreage Balance Sheet, Balance 2000 column, version 10/19/00.
- Information supporting unit costs is shown on a separate page.
- All acreages under the area titles in this estimate need to be confirmed.

Panel B

	143.5 acres	calc days	\$/HR	\$
project manager		71.8	48.25	27,696
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	71.8	219.19	125,815
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	36.8	373.77	110,023
seeding & fertilizing - DH4	10 acre/day	14.4	104.65	12,014
seed mix - drill seed	acre>	144	106.00	15,211
fertilizer	acre>	144	38.00	5,453
Total				296,211
	\$2,064 per acre			

Panel C

Year 2000 balance = -16.1 acres(more reclaimed than disturbed)

	0 acres	calc days	\$/HR	\$
project manager		0.0	48.25	0
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	0.0	219.19	0
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	0.0	373.77	0
seeding & fertilizing - DH4	10 acre/day	0.0	104.65	0
seed mix - drill seed	acre>	0	106.00	0
fertilizer	acre>	0	38.00	0
Total				0
	ERR per acre			

Panel C-MISC.

- Unreclaimed areas in Panel C which provide access & will remain disturbed until final reclamation.
- This category does not include SAG Mill & Mine Shop

	101 acres	DAYS>acre<	\$/HR	\$
project manager		32.1	48.25	12,378
ripping - D9N, 0.4 mph	3.15 acre/day	32.1	257.00	65,931
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	0.0	373.77	0 ???
seeding & fertilizing - DH4	10 acre/day	10.1	104.65	1,057
seed mix - drill seed	acre>	101	106.00	10,706
fertilizer	acre>	101	38.00	3,838
Total				93,910
	\$930 per acre			

RECLAMATION SURETY ESTIMATE**DRAFT**

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S.F. Phosphates Ltd. Company

M/047/007

Last Update

10/20/2000

Vernal Phosphate Operations

Uintah County, Utah

page "estimate"

PAGE NUMBER: 2

Prepared by Utah Division of Oil, Gas & Mining (AAG)

Panel D

	70.1 acres	DAYS>acre<	\$/HR	\$
project manager		35.1	48.25	13,529
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	35.1	219.19	61,461
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	18.0	373.77	53,746
seeding & fertilizing - DH4	10 acre/day	7.0	104.65	5,869
seed mix - drill seed	acre>	70	106.00	7,431
fertilizer	acre>	70	38.00	2,664
Total				144,700
	\$2,064 per acre			

Panel D-MISC.

-Access to Panel D mining areas to remain until time of final reclamation; see map 1/7/93

	25 acres	DAYS>acre<	\$/HR	\$
project manager		7.9	48.25	3,064
ripping - D9N, 0.4 mph	3.15 acre/day	7.9	257.00	16,320
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	6.4	373.77	19,168
seeding & fertilizing - DH4	10 acre/day	2.5	104.65	2,093
seed mix - drill seed	acre>	25	106.00	2,650
fertilizer	acre>	25	38.00	950
Total				44,244
	\$1,770 per acre			

FUTURE MINING

-A projected disturbance for 3 years of future mining @ 60 acres/year.

-The proposed areas are not identified on a map.

	180 acres	DAYS>acre<	\$/HR	\$
project manager		90.0	48.25	34,740
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	90.0	219.19	157,817
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	46.2	373.77	138,007
seeding & fertilizing - DH4	10 acre/day	18.0	104.65	15,070
seed mix - drill seed	acre>	180	106.00	19,080
fertilizer	acre>	180	38.00	6,840
Total				371,554
	\$2,064 per acre			

RECLAMATION SURETY ESTIMATE**DRAFT**

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S.F. Phosphates Ltd. Company

M/047/007

Last Update

10/20/2000

Vernal Phosphate Operations

Uintah County, Utah

page "estimate"

PAGE NUMBER: 3

Prepared by Utah Division of Oil, Gas & Mining (AAG)

SAG Mill & Shop

-SAG Mill (15 acres) & Mine Shop (6.2 acres)

	21.2 acres	DAYS>acre<	\$/HR	\$
project manager		5.4	48.25	2,098
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	0.0	219.19	0 ???
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	5.4	373.77	16,254
seeding & fertilizing - DH4	10 acre/day	2.1	104.65	1,775
seed mix - drill seed	acre>	21	106.00	2,247
fertilizer	acre>	21	38.00	806
Total				23,180
	\$1,093 per acre			

Main Office & Mill

-Earthwork in the Main Office & Mill area after final reclamation demolition

-Demolition of facilities is included in the Demolition section

	24 acres	DAYS>acre<	\$/HR	\$
project manager		7.6	48.25	2,941
ripping - D9N, 0.4 mph	3.15 acre/day	7.6	257.00	15,667
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	0.0	373.77	0 ???
seeding & fertilizing - DH4	10 acre/day	2.4	104.65	2,009
seed mix - drill seed	acre>	24	106.00	2,544
fertilizer	acre>	24	38.00	912
Total				24,073
	\$1,003 per acre			

Unpaved Roads

-Unpaved access roads throughout the mine site; estimated 10 mi x 15 ft

-Need to verify this length and width are still accurate.

???

-These roads are not identified on a map.

	18 acres	DAYS>acre<	\$/HR	\$
project manager		9.0	48.25	3,474
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	9.0	257.00	18,504
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day 0	0.0	373.77	0 ???
seeding & fertilizing - DH4	10 acre/day	1.8	104.65	1,507
seed mix - drill seed	acre>	18	106.00	1,908
fertilizer	acre>	18	38.00	684
Total				26,077
	\$1,449 per acre			

Paved Roads

-Paved access roads to & from the main offices; estimated at 2.9 mi x 30 ft

-Need to verify this length and width are still accurate.

???

-These roads are not identified on a map.

	11 acres	DAYS>acre<	\$/HR	\$
project manager		3.5	48.25	1,348
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	5.5	219.19	9,644
ripping - D9N, 0.4 mph	3.15 acre/day	3.5	257.00	7,181
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	0.0	373.77	0 ???
seeding & fertilizing - DH4	10 acre/day	1.1	104.65	921
seed mix - drill seed	acre>	11	106.00	1,166
fertilizer	acre>	11	38.00	418
Total				20,678
	\$1,880 per acre			

RECLAMATION SURETY ESTIMATE**DRAFT**

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S.F. Phosphates Ltd. Company

M/047/007

Last Update

10/20/2000

Vernal Phosphate Operations

Uintah County, Utah

page "estimate"

PAGE NUMBER: 4

Prepared by Utah Division of Oil, Gas & Mining (AAG)

Tailings Pond-Misc

-Miscellaneous areas associated with the tailings dam not shown on 1/7/93 map

	61.9 acres	DAYS>acre<	\$/HR	\$
project manager		19.7	48.25	7,586
ripping - D9N, 0.4 mph	3.15 acre/day	19.7	257.00	40,407
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	15.9	373.77	32,632
seeding & fertilizing - DH4	10 acre/day	6.2	104.65	18,509
seed mix - drill seed	acre>	62	106.00	6,478
fertilizer	acre>	62	38.00	6,561
Total				112,174
	\$1,812 per acre			

Tailings Pond-Impounded Material

	591 acres	DAYS>acre<	\$/HR	\$
project manager		59.1	48.25	22,813
initial seeding (hydroseeder, mulch, tackifier)	930 \$/acre	0.0	0.00	549,630
initial seed mix - nurse crop	21 \$/acre	0.0	0.00	12,411
initial fertilizer	38 \$/acre	0.0	0.00	22,458
regrading D8N - 10(100'dia x10') -DOGM	9,691 cy	0.0	0.84	8,141
discing nurse crop - DH4	10 acre/day	59.1	104.65	49,479
applying seed & fertilizer - DH4	10 acre/day	59.1	104.65	49,479
mulch application - DH4 w/attachment	24 acre/day	24.6	107.17	21,112 ???
seed mix - broadcast	acre>	591	159.00	93,969
fertilizer	acre>	591	38.00	22,458
mulch @ 1 ton/acre	acre>	345	60.00	20,700 ???
Total				872,649
	\$1,477 per acre			

Roads

OMITTED HERE -This item was included in Paved & Unpaved Roads Sections

Pipeline

-Maximum area re-disturbed due to decommissioning or repair of the pipeline at final reclamation.

-Pipeline decommissioning tasks and acreage need to be verified.

???

	2.5 acres	DAYS>acre<	\$/HR	\$
project manager		1.3	48.25	483
contouring D9N, 100 ft, 1.5 ft depth	2 acre/day	1.3	219.19	2,192
topsoil spreading 637E P-P, 6 inch depth	3.9 acre/day	0.0	210.44	0 ???
seeding & fertilizing - DH4	10 acre/day	0.3	104.65	209
seedmix - drill seed	acre>	2.5	106.00	265
fertilizer	acre>	2.5	38.00	95
Total				3,244
	\$1,297 per acre			

RECLAMATION SURETY ESTIMATE**DRAFT**

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S.F. Phosphates Ltd. Company

M/047/007

Last Update

10/20/2000

Vernal Phosphate Operations

Uintah County, Utah

page "estimate"

PAGE NUMBER: 5

Prepared by Utah Division of Oil, Gas & Mining (AAG)

Conveyor w/tunnel

OMITTED HERE - this item was included in Panel C Misc. Section

Access roads D&E

OMITTED HERE -this item was included in Unpaved Roads Section

Demolition costs (IX BONDING)

???

-This section was amended to the plan in January 1984

-Man or equipment days used here were taken from the Nov. 1985 estimate

-Need verification that listing of structures used in calculating 1984 estimate for demolition is still accurate

???

	DAYS	\$/HR	\$
project manager	140.0	48.25	54,040
laborers	851.0	37.33	254,143
welders (?need equipment?)	150.0	58.05	69,660
crane, operator & oiler	75.8	215.21	130,417
D9 dozer	10.5	219.19	18,412
tractor trailer	151.5	92.02	111,528
front end loader - Cat 938F	86.0	89.16	61,342
Total			699,542

???

Revised MRP August 1984

???

-This revision was dated August 10, 1984

-The revision was for expansion of mining operations east of Highway 191 (US 44)

-Man or equipment days used here were taken from the Nov. 1985 estimate

-Need verification that listing of structures used in calculating 1984 estimate for demolition is still accurate

???

	DAYS	\$/HR	\$
project manager	84.0	48.25	32,424
laborers	425.0	37.33	126,922
welders (?need equipment?)	40.0	58.05	18,576
crane, operator & oiler	25.0	215.21	43,042
D8 dozer	4.0	187.05	5,986
D9 dozer	5.0	219.19	8,768
tractor trailer	30.0	92.02	22,085
front end loader - Cat 938F	22.0	89.13	15,687
Total			273,489

???

Additional mine areas

OMITTED HERE -this item was included in Future Mining Section

RECLAMATION SURETY ESTIMATE

DRAFT

filename m47

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S.F. Phosphates Ltd. Company

M/047/007

Last Update

10/20/2000

Vernal Phosphate Operations

Uintah County, Utah

page "estimate"

PAGE NUMBER: 6

Prepared by Utah Division of Oil, Gas & Mining (AAG)

BONDING SUMMARY		ACRE	\$	\$/acre
Panel B		143.5	296,211	2,064
Panel C		0.0	0	ERR
Panel C-Miscellaneous		101.0	93,910	930
Panel D		70.1	144,700	2,064
Panel D-Miscellaneous		25.0	44,244	1,770
Future Mining		180.0	371,554	2,064
SAG Mill & Shop		21.2	23,180	1,093
Plant Facilities		24.0	24,073	1,003
Unpaved Roads		18.0	26,077	1,449
Paved Roads		11.0	20,678	1,880
Tailings Pond - Miscellaneous Areas		61.9	112,174	1,812
Tailings Pond - Impounded Material		591.0	872,649	1,477
Pipeline		2.5	3,244	1,297
Demolition (IX Bonding)	N/A		699,542	N/A
Revised MRP Aug. 1984	N/A		273,489	N/A
	SUBTOTAL		3,005,724	
Mobilization - 6 pieces of equip			6,000	
	SUBTOTAL		3,011,724	
ADD 10% Contingency			301,172	
	SUBTOTAL		3,312,897	
ADD site monitoring - 3 years (DOGM)			15,000	???
	SUBTOTAL		3,327,897	
ESCALATION FOR 5 YEARS @ 3.13%/YR			554,455	
TOTAL IN 2005-\$			\$3,867,352	
ROUNDED TOTAL IN 2005-\$			\$3,867,000	DRAFT
				20-Oct-2000
TOTAL AREA BONDED =		1,249.2 ACRES		
AVG. COST/ACRE =			\$3,096	
CHECK>		1,249.2		

RECLAMATION SURETY ESTIMATE

S.F. Phosphates Ltd. Company

Vernal Phosphate Operations

Prepared by Utah Division of Oil, Gas & Mining (AAG)

DRAFT

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Uintah County, Utah

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10/20/2000

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MASTER LISTING - UNIT COSTS

task description	\$/hr	CY/acre	CY/hr	\$/acre	hr/acre	acre/day	\$/day
project manager	48.25	NA	NA	NA	NA	NA	386.00
Means Heavy Construction Cost Data 2000, 01300-700-0180, project manager, minimum 41,930/wk => \$48.25/day							
laborer	37.33	NA	NA	NA	NA	NA	298.64
Means Heavy Construction Cost Data 2000, Crew B-6, including O & P							
contouring - D9N dozer, 100 ft push, 1.5 ft avg. depth	219.19	2,420.0	606.4	874.74	3.99	2.00	1,753.52
DOGM calculations using Rental Rate Blue Book 3Q00 for Cat D9N & Means 2000 Crew B-10B (see attached calc. sheet)							
topsoil spreading - 637E P-P scraper, 1/4 mi. one-way, 6 in depth	373.77	806.7	396.5	760.42	2.03	3.93	2,990.16
DOGM calculations using Rental Rate Blue Book 3Q00 for Cat 637E P-P & Means 2000 Crew B-10B (see attached calc. sheet)							
application of seed & fertilizer - DH4 XL Series III dozer (1996)	104.65	0.0	0	83.72	0.00	10.00	837.20
DOGM calculations using Rental Rate Blue Book 3Q00 for Cat DH4 XL plus PTO powered sand spreader & Means 2000 Crew B-10B							
seed mix - nurse crop	0	0.0	0	21.00	NA	NA	0.00
Average of two costs provided by SF, @ rate of 4.0 lb/acre							
seed mix - drill seed rate	0	0.0	0	106.00	NA	NA	0.00
Average of two costs provided by SF, @ rate of 11.45 lb/acre							
seed mix - broadcast seed rate (1.5 x drill seed rate)	0	0.0	0	159.00	NA	NA	0.00
Average of two costs provided by SF, @ rate of 17.18 lb/acre							
fertilizer	0	0.0	0	38.00	NA	NA	0.00
Cost provided by SF							
ripping - D9N dozer, 0.4 mph, multi-shank, 3 adj. parallel	257.00	0.0	0	652.78	2.54	3.15	2,056.00
DOGM calculations using Rental Rate Blue Book 3Q00 for Cat D9N plus multi-shank, 3 adj. parallel & Rental Rate Blue Book 3Q00 Crew B-10B (see attached calc. sheet)							
discing - DH4 XL dozer	104.65	0.0	0	83.72	0.00	10.00	837.20
Use same costs as seed application: DOGM calculations using Rental Rate Blue Book 3Q00 for Cat DH4 XL plus PTO powered sand spreader & Means 2000 Crew B-10B							
mulching - DH4 XL dozer	107.17	0.0	0	35.72	3.00	24.00	857.36
Use same rate for tractor & operator in seed application, plus Finn B70 diesel powered, trailer mounted mulcher - Rental Rate Blue Book 3Q00, 1985 productivity 24 acre/day							
welder	33.5	NA	NA	NA	NA	NA	268.00
Means Heavy Construction Cost Data 2000, Crew E-3, including O & P							
crane + operator + oiler	215.21	NA	NA	NA	NA	NA	1,721.68
Means Heavy Construction Cost Data 2000, Crew E-20, including O & P							
tractor trailer + operator	92.02	NA	NA	NA	NA	NA	736.16
DOGM calculations using Rental Rate Blue Book 2Q00 for on highway truck tractors 6x4 plus on highway rear dump trailer & Means 2000 Crew B-34A							
front end loader + operator	89.16	NA	NA	NA	NA	NA	713.28
Rental Rate Blue Book 3Q00 for Cat 938F front end loader & Means 2000 Crew B-10P							
demolition - D8N dozer	187.05	NA	275.5	NA	NA	NA	1,496.40
DOGM calculations using Rental Rate Blue Book 3Q00 for Cat D8N & Means 2000 Crew B-10B (see attached calc. sheet)							

ACREAGE BALANCE SHEET

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19-Oct-2000

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VERNAL PHOSPHATE OPERATIONS - SF PHOSPHATES, Ltd.

- Current reclamation surety is a surety bond for \$2,024,000 in year 1998-\$ for 861.7 acres of disturbance
- SF Phosphates is to maintain a balance of 861.7 acres of disturbance by performing concurrent reclamation
- Panels are separated by drainages: Hole In the Wall Canyon between Panel B & C; Brush Creek between Panel A & B
- The column "DISTURB" represents the amount of new disturbance associated with new areas being mined that year
- The column "RECLAIM" represents the amount of disturbance reclaimed by SF that year according to annual reports & report maps
- The column "RELEASE" represents the amount of disturbance formally released by the Division that year
- This sheet does not show balances for the years 1994 and 1995
- Information year 2000 disturbed and reclaimed categories is not yet available.
- The acreage for the recent TSF Revision is included as Tailings Pond, Disturbance 2000, 246 acres.
- The acreages for unpaved roads, and Tailings-misc, need to be verified considering the TSF Revision.
- BALANCE 1999 = BALANCE 1998 + DISTURB 1999 - RELEASE 1999

FEATURE ID	AT RANSFE	BALANCE 1997	DISTURB 1998	RECLAIM 1998	RELEASE 1998	BALANCE 1998	DISTURB 1999	RECLAIM 1999	RELEASE 1999	BALANCE 1999	DISTURB 2000	RECLAIM 2000	RELEASE 2000	BALANCE 2000
PANEL B	19	177.7	68.7	55.3	26.7	219.7	45.6	36.5	56.8	208.5			65	143.5
PANEL C	118	118		10	131.7	-13.7		7.5	2.4	-16.1			0	-16.1
PANEL D	80	80			4.9	75.1				75.1			5	70.1
PANEL 1	0	0				0				0			0	0
FUTURE MINE-UN	180	180				180				180			0	180
SAG MILL & SHOP	21.2	21.2				21.2				21.2			0	2
PLANT FACILITIES	24	24				24				24			0	24
UNPAVED ROADS	18	18				18				18			0	18
PAVED ROADS	11	11				11				11			0	11
TAILINGS - MISC.	43	43				43	18.9	5.5		61.9			0	61.9
TAILINGS POND	345	345				345	0			345	246		0	591
PIPELINE	2.5	2.5				2.5				2.5			0	2.5
TOTAL (acres)	861.7	1020.4	68.7	65.3	163.3	925.8	64.5	49.5	59.2	931.1	246	0	70	1107.1

ACREAGE BALANCE SHEET

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- Current reclamation surety is a surety bond for \$2,024,000 in year 1998-\$ for 861.7 acres of disturbance
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- Panels are separated by drainages: Hole In the Wall Canyon between Panel B & C; Brush Creek between Panel A & B
- The column "DISTURB" represents the amount of new disturbance associated with new areas being mined that year
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-This sheet does not show balances for the years 1994 and 1995

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-The acreages for unpaved roads, and Tailings-misc, need to be verified considering the TSF Revision.

-BALANCE 1999 = BALANCE 1998 + DISTURB 1999 - RELEASE 1999

FEATURE ID	AT TRANSFER	DISTURB 1996	RECLAIM 1996	RELEASE 1996	BALANCE 1996	DISTURB 1997	RECLAIM 1997	RELEASE 1997	BALANCE 1997	DISTURB 1998	RECLAIM 1998	RELEASE 1998	BALANCE 1998	DISTURB 1999	RECLAIM 1999	RELEASE 1999	BALANCE 1999	DISTURB 2000	RECLAIM 2000	RELEASE 2000	BALANCE 2000
PANEL B	19	66	48.2		85	92.7	66		177.7	68.7	55.3	26.7	219.7	45.6	36.5	56.8	208.5			65	143.5
PANEL C	118				118				118		10	131.7	-13.7		7.5	2.4	-16.1			0	-16
PANEL D	80				80				80			4.9	75.1				75.1			5	70.1
PANEL 1	0				0				0				0				0			0	0
FUTURE MINE-UNK	180				180				180				180				180			0	180
SAG MILL & SHOP	21.2				21.2				21.2				21.2				21.2			0	21.2
PLANT FACILITIES	24				24				24				24				24			0	24
UNPAVED ROADS	18	VERIFY			18				18				18				18			0	18
PAVED ROADS	11				11				11				11				11			0	11
TAILINGS - MISC.	43	VERIFY			43				43				43	18.9	5.5		61.9			0	61.9
TAILINGS POND	345				345				345				345	0			345	246		0	591
PIPELINE	2.5	VERIFY			2.5				2.5				2.5				2.5			0	2.5
TOTAL (acres)	861.7	66	48.2	0	927.7	92.7	66	0	1020.4	68.7	65.3	163.3	925.8	64.5	49.5	59.2	931.1	246	0	70	110